

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-098102  
(43)Date of publication of application : 07.04.2000

(51)Int.Cl.

G02B 3/00  
B29C 41/12  
B32B 3/30  
B32B 7/02  
G02F 1/1335  
// B29L 11:00

(21)Application number : 10-263684  
(22)Date of filing : 17.09.1998

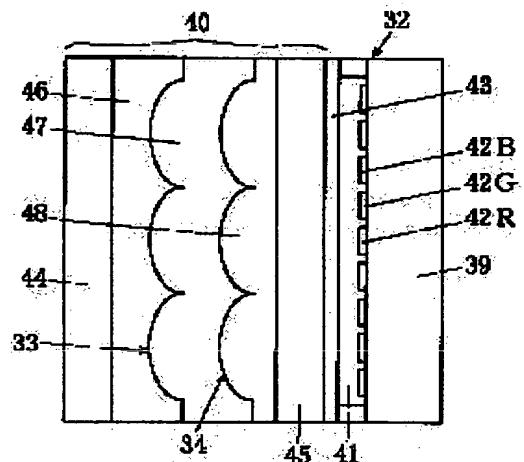
(71)Applicant : OMRON CORP  
(72)Inventor : SHIMIZU ATSUSHI  
ITO YOSHINORI

## (54) LENS ARRAY SUBSTRATE, ITS PRODUCTION AND IMAGE DISPLAY DEVICE

### (57)Abstract:

PROBLEM TO BE SOLVED: To simplify the alignment of the optical axes of microlens arrays and to simplify the manufacturing process of a microlens array substrate.

SOLUTION: A UV-curing resin is fed to the top of a base glass 44 and stamped with a stamper to form a microlens array 33. The resin is then cured by UV irradiation to form a transparent resin layer 46. Another UV-curing resin having a different refractive index from that of the 1st UV-curing resin is fed to the top of the transparent resin layer 46 and stamped with the same stamper to form a microlens array 34. The resin is cured by UV irradiation to form a transparent resin layer 47. The third UV-curing resin having a different refractive index from those of the 1st and 2nd UV-curing resins is fed to the top of the transparent resin layer 47, pressed by a base glass and cured by UV irradiation to form a transparent resin layer 48.



## LEGAL STATUS

[Date of request for examination] 18.09.2002  
[Date of sending the examiner's decision of rejection]  
[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]  
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[Date of extinction of right]



**Japanese Publication for Unexamined Patent Application**

**Tokukai No. 2000-98102/2000 (P2000-98102A)**

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**A. Relevance of the above-identified Document**

This document has relevance to claims 1 to 28 of the present application.

**B. Translation of the Relevant Passages of the Document**

[CLAIMS]

[CLAIM 1]

A lens array substrate including plural layers of lens array, comprising:

...;

the lens array being an interface between the transparent resin layers whose refractive indexes are different from each other.

[CLAIM 5]

A method of manufacturing a lens array substrate including plural layers of lens array, comprising the steps of:

forming a first transparent resin layer by curing an uncured resin material while pressing a first stamper against the resin material;

supplying, onto the first transparent resin layer, an uncured



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resin material whose refractive index is different from that of the first transparent resin layer, and forming a second transparent resin layer by curing the resin material while pressing a second stamper against the transparent resin layer, so as to produce lens array at an interface between the first and second transparent resin layers;

supplying, onto the second transparent resin layer, an uncured resin material whose refractive index is different from that of the second transparent resin layer, and forming a third transparent resin layer by curing the resin material, so as to produce another lens array at an interface between the second and third transparent resin layers.

[CLAIM 6]

The method of manufacturing the lens array substrate as set forth in claim 5, wherein:

a single stamper is used as the first stamper and the second stamper.







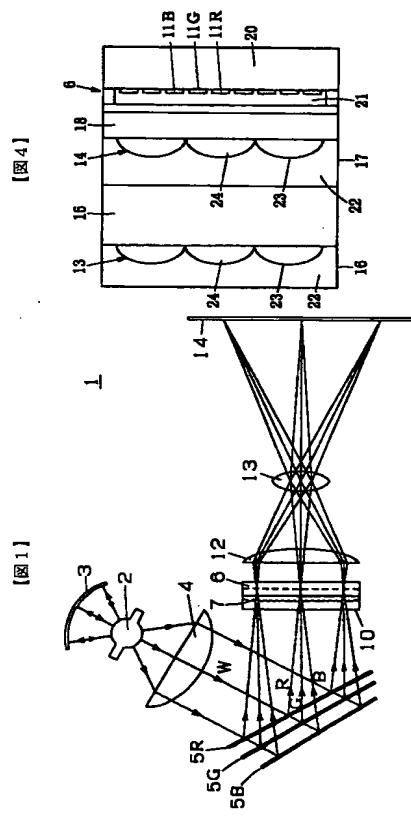




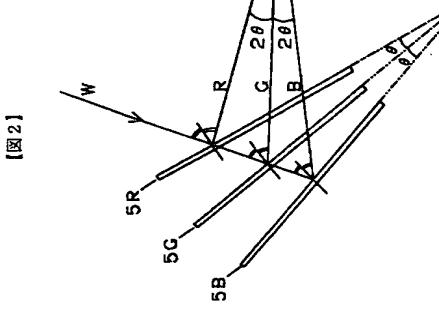




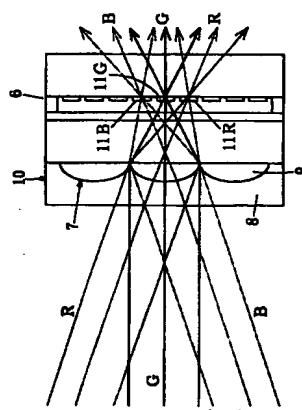
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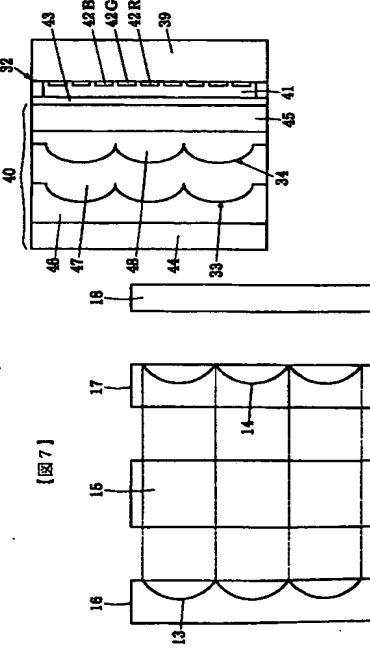
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〔図3〕



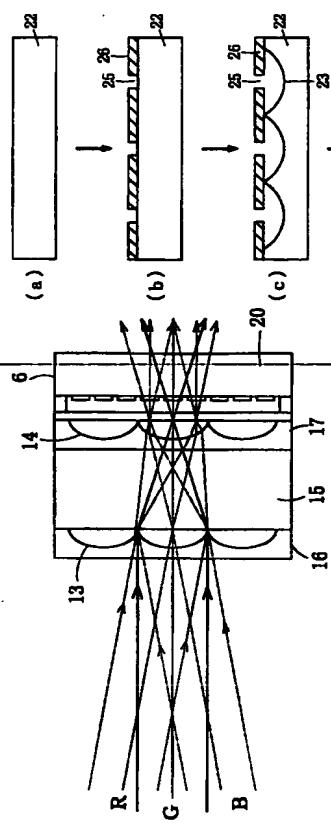
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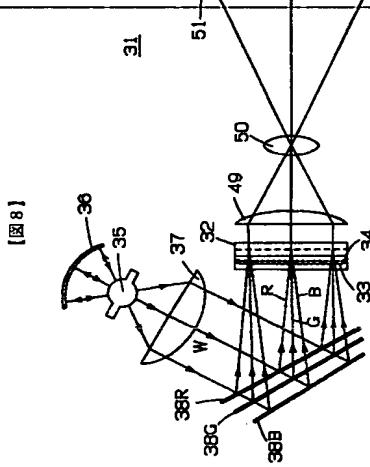
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〔図6〕

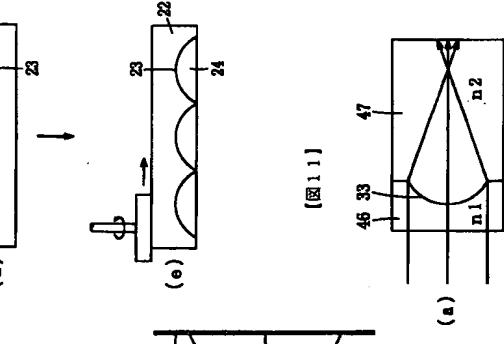
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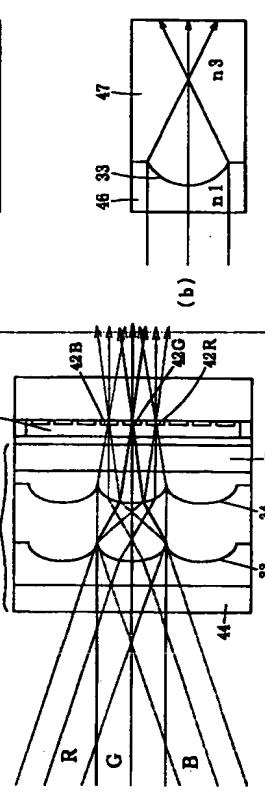
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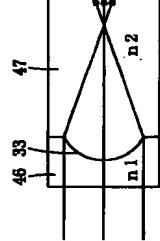
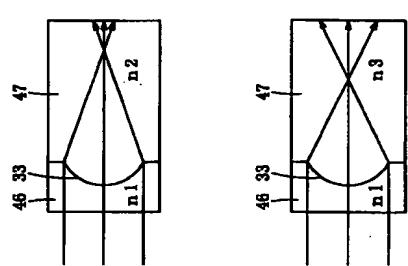
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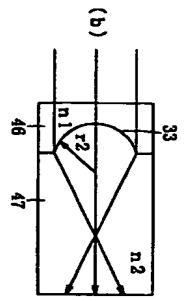
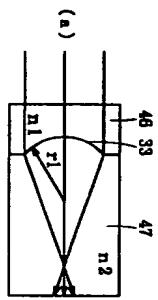


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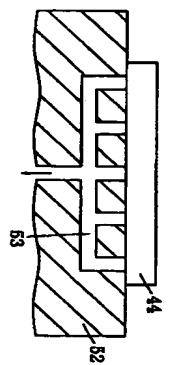
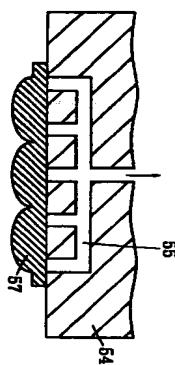
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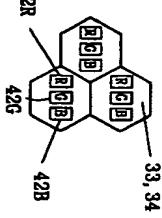
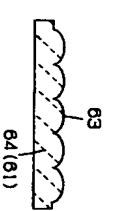


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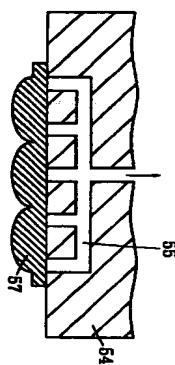
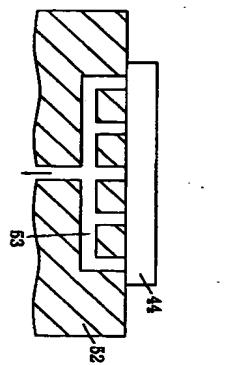
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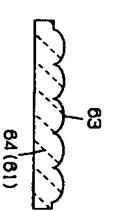
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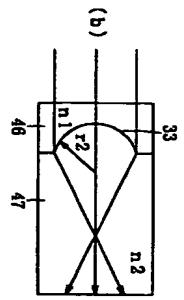
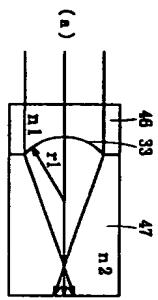
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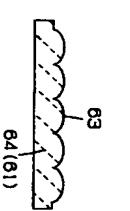
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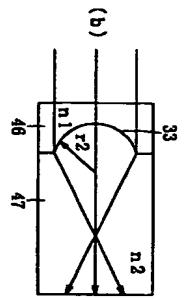
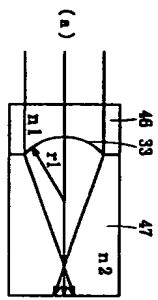
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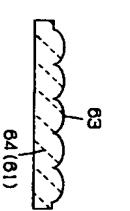
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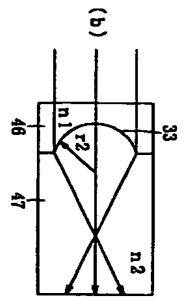
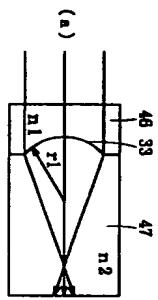
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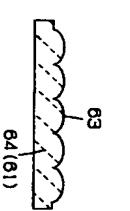
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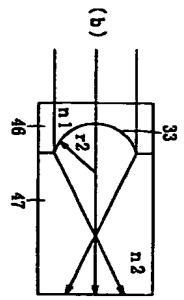
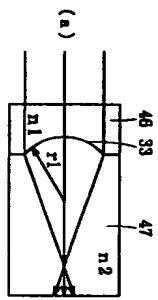
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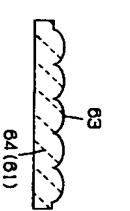
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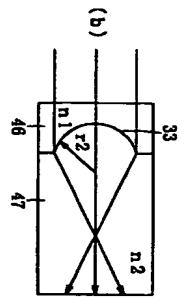
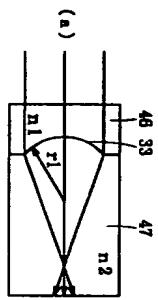
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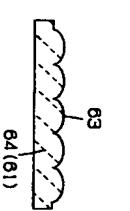
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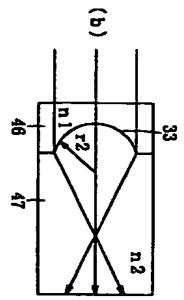
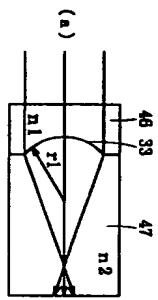
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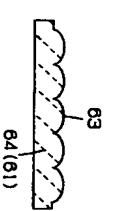
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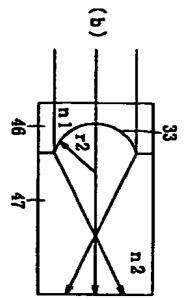
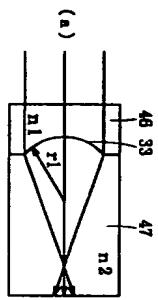
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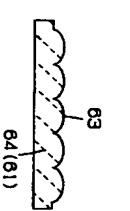
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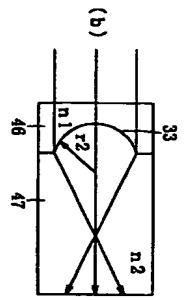
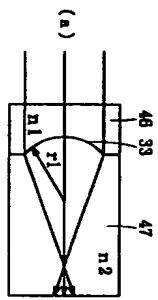
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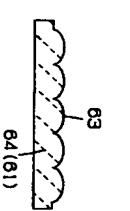
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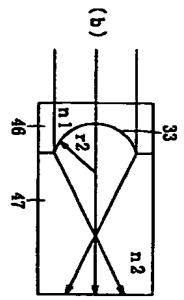
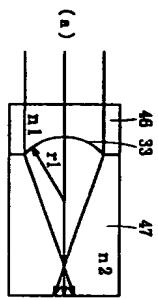
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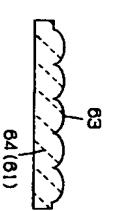
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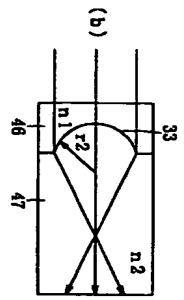
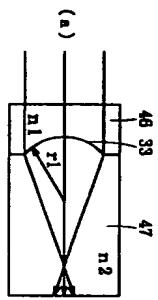
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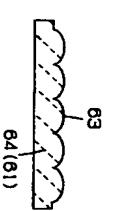
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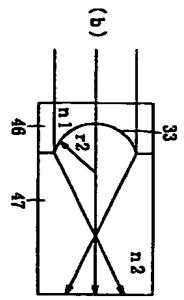
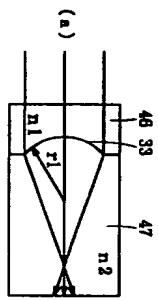
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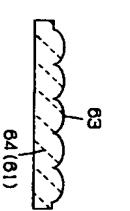
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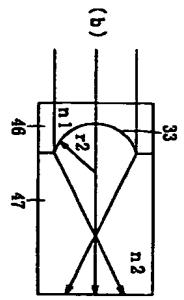
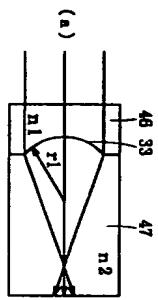
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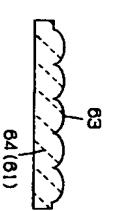
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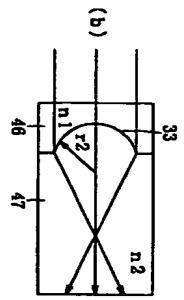
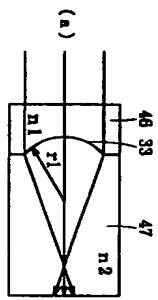
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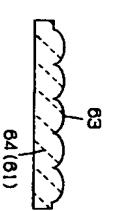
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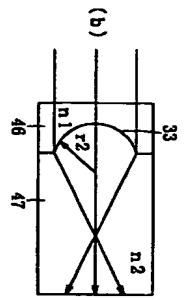
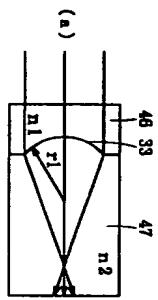
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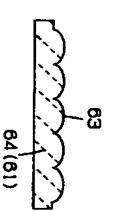
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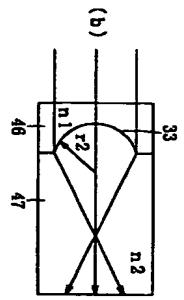
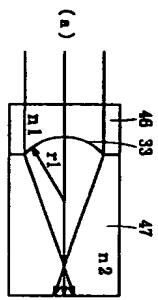
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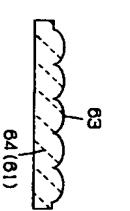
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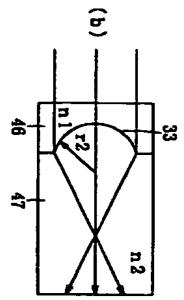
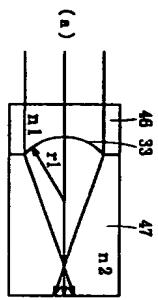
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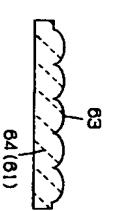
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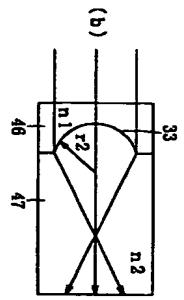
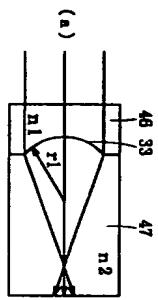
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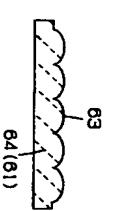
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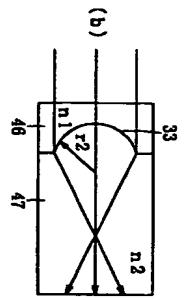
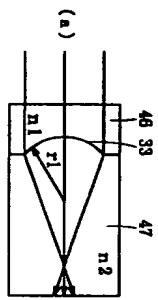
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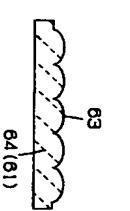
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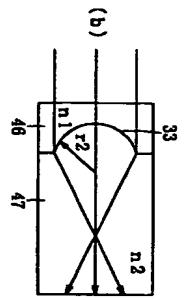
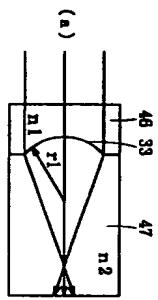
[図1.6]



[図2.3]

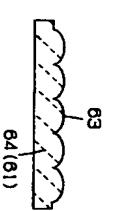
(15)

[図1.2]



(16)

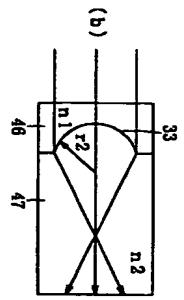
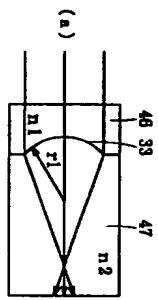
[図1.6]



[図2.3]

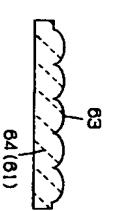
(15)

[図1.2]



(16)

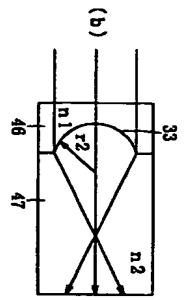
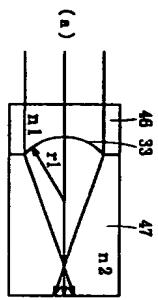
[図1.6]



[図2.3]

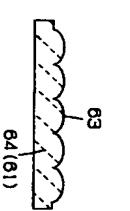
(15)

[図1.2]



(16)

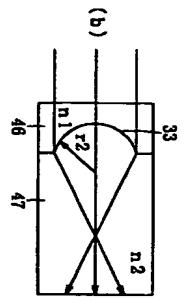
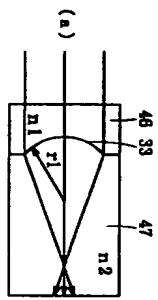
[図1.6]



[図2.3]

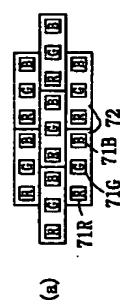
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[図1.2]

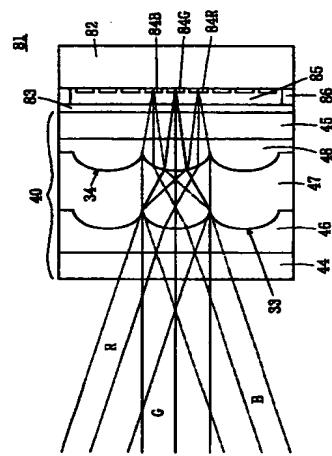


(17)

[図20]

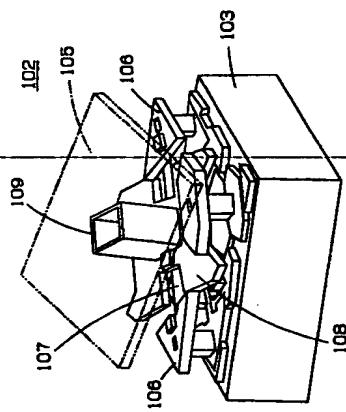


[図21]

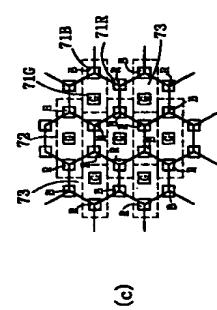


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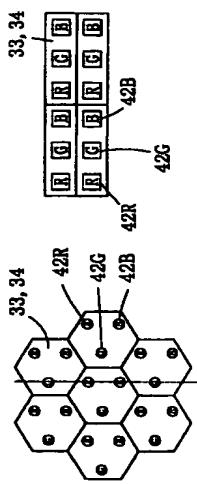
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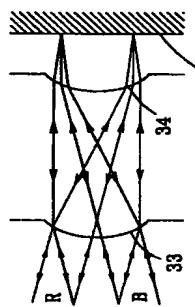
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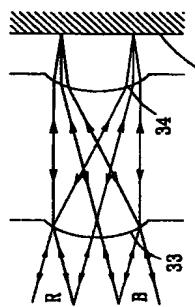
[図24]



[図25]



[図26]



[図27]

